EPIDEMIOLOGICAL STUDY OF INFECTIOUS DISEASES IN WILD RAPTOR HOSPITALIZED IN WILDLIFE RECOVERY CENTER.

INTRODUCTION

Raptors are species with important functions and benefits and they are good sentinels. Although these species have become endangered. Moreover, many studies show that wildlife animals transmit diseases to humans and are reservoir of resistant antibiotic bacteria. So, surveillance and monitoring of infectious disease in these animals results interesting for both human and animal health. With this aim the wildlife recovery centres (WRC) have a large potential. The study and evaluation of wildlife animals entering in WRC is useful for surveillance programs.

OBJECTIVES

- ✓ Description of microbiologic isolation
- ✓ Relate microorganisms with the sample type and pathology.
- ✓ Examine infectious agents isolated according to the animal species.
- ✓ Evaluate the zoonotic potential.
- ✓ Evaluate the diagnostic utility of analyzes (clinical or necropsy).

MATERIAL AND METHODS

- ✓Recollection of microbiological records.
- ✓Depuration of the data collected.
- ✓Organization in a computerized database
- ✓Elaboration of tables, graphs and descriptive statistic

RESULTS AND DISCUSSION

425 reports

22 *Falconiformes* 7 *Stringiformes* 29 Indeterminat

Table 1: Raptors most analyzed.

	Total (%)
Falco naumani	13,6
Falco tinnucnculus	10
Buteo buteo	10
Otus scops	7,3

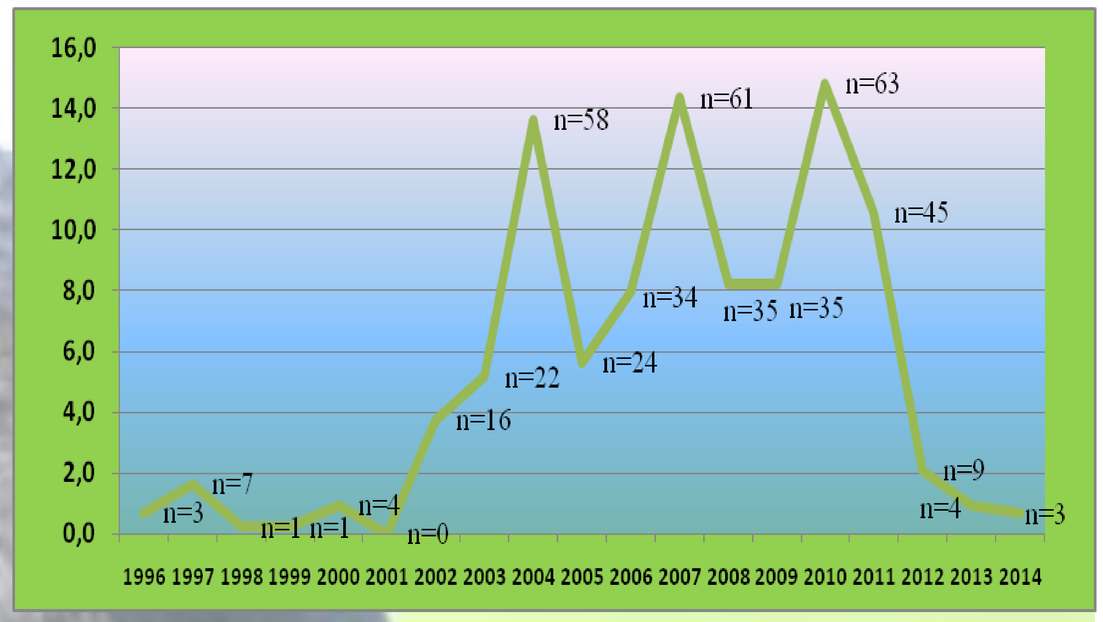

Figure 1: Percentage (Y axis) and number (n) of microbiological reports of raptors from the WRC Torreferrusa during the period 1996-2014.

447 isolations: 262 pure and 185 mix culture . 653 microorganisms of 32 genus.

Table 2: Microorganisms obtained of pure and mix isolations, sample analyzed and association pathology.

	Pure (%)			Mix (%)			Sample (%)	Associated pathology
	Family	Group	Total	Family	Group	Total		
Gram negative cocci			75			68		
Enterobacteriaceae		76	57		87	59		
Escherichia coli	75	57	43	56,5	49	33,4	Viscera (64,6) Faeces (10,6)	Gastroenteritis, peritonitis, septicemia, cloacitis, multiple organ dysfunction syndrome
Proteus spp.	12	9	7	30	26	18	Viscera (55,6)	Septicemia, cloacitis, multiple organ dysfunction syndrome
Salmonella spp.	6	4,5	3,5				Viscera (44,4) Faeces (44,4)	Gastroenteritis, septic arthritis, septicemia
No *Enterobacteriaceae*			18		12,7	8,7		
Pseudomona spp.	55	13	10	43	5,5	3,7	Viscera (80,8)	Gastroenteritis, rhinitis, sinusitis, pneumonia tracheitis, aerosaculitis, septicemia
Gram positive cocci			13,5			20		
Staphylococcus spp.		77	10,3		44	8,6	Viscera (37) Podal (15)	Dermatitis, folliculitis, pododermatitis, conjunctivitis cloacitis, septicemia
Gram positive bacilli			7					
Mycobacterium spp.		83	5,7				Viscera (93,3)	Rhinitis, sinusitis, pneumonia tracheitis, aerosaculitis, septicemia
Fungus/yeast			4,6			6		
Aspergillus spp.		41,6	2		25	1,4	Air bag (60)	Rhinitis, sinusitis, pneumonia tracheitis, aerosaculitis, septicemia
Candida spp.		50	2,3		66,6	4	Crop (50)	

- ✓ There were more pure isolations from samples obtained from necropsies than in live animals.
- ✓ A lot of microorganism isolated were zoonotic agents.
- ✓ *Staphylococcus spp*., was isolated regularly in peregrine falcon >lesser kestrel > buzzard.
- ✓ Presence of *Candida spp*., especially in vultures and buzzards and *Salmonella spp*., especially vultures, Bonelli's eagle and owl
- ✓ *E. coli* and *Proteus spp*., present in most species,
- ✓were more isolated in lesser kestrel > buzzard > peregrine falcon.

Table 3: Statistical analysis based on origin of the sample.

	Microbiological results		
	Clinical	Necropsy	Unknown
Negative	80 (36,4)	47 (27,2)	8 (80)
Pure	65 (29,5)	76 (43,9)	1 (10)
Mix	75 (34,1)	50 (28,9)	1 (10)
Chi square	18,922 (0,001)		

CONCLUSION

Epidemiological descriptive studies about microbiological cultures from wildlife animals are interesting for assessing infectious diseases in the wild. The enterobacteriaceae family, mainly *E. coli*, was the most common pathogens isolated. Samples collected from clinical specimens were more contaminated than those from necropsy. The presence of zoonotic bacteria in microbiological cultures of raptors is important and should be considered as a potential risk for public and animal health.

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